Fig. 3. A portion of a radius from the proximal end of fig. 1, highly magnified.

Fig. 4. Beak of a recently-hatched example of *Calodromas elegans*, magnified, showing the denticulations along the cutting-edges of the distal end. Those of the mandible are slightly exaggerated.

References:—*C.* Cere, Cilia; *H.* Hyporhachis; *R.* Radius; *Rm.* Ramus; *Rh.* Rhachis.

II.—*A List of the Birds of the Island of Balâbac, with some Notes on and Additions to the Avifauna of Palâwan.* By A. H. Everett, C.M.Z.S., M.B.O.U.

I. Birds of Balâbac Island.

Balâbac Island is separated from Balambangan, Banguey, and the other islands which cluster around the N.E. extremity of Borneo by the South Balâbac Strait, which leads from the China Sea into the Sulu or Mindoro Sea. This strait is about 26 miles wide to the northward of Balambangan Island, and somewhat wider between Banguey Island and Balâbac, the highest peaks of which two last-named islands lie N. ½ E. and S. ½ W. from each other, 37½ miles apart, so that the islands are plainly visible each from the other. The water in the South Balâbac Strait is for the most part less than 50 fathoms deep, but there is a narrow channel through it in which the soundings vary between 50 and 100 fathoms, though nowhere maintaining the latter depth continuously between the China and Sulu Seas.

The west coast cannot be approached closely on account of numerous coral reefs and shoals, which extend several miles to seaward, but the east coast is bold, with deep water close inshore. The island is nearly 20 miles long in a due N. and S. direction, and 9 miles broad; and it is generally hilly, the more elevated trends varying from 800 to 1300 feet, whilst Balâbac Peak attains a height of 1890 feet, and forms the culminating point on the island. With the exception of some insignificant clearings, the entire island is densely wooded. The rainfall is very heavy, the driest months being February and March, as on the neighbouring part of the N.W. coast of Borneo.

Immediately to the north of Balâbac is the North Balâbac Strait, separating the island from the S.W. extremity of Palâwan. This strait differs from the southern passage in its comparatively smaller breadth; in the fact that the depth of the sea throughout it is under 50 fathoms; and in its being studded by numerous islets, of which the principal ones are Bancâlan, Mantangule, Canabungan, Candarâman, Pandannan, and Bugsuk. As all these islets are of recent coral formation and flat, while the S.W. end of Palâwan is low and shelving, the strait must have been, at no very distant date, of considerably greater width and clear of islets, and the geographical connection of Balâbac with Palâwan would not have been so close as it is now *.

The zoology of Balâbac remained wholly unknown until Dr. J. B. Steere visited it in 1874, when he stayed a month on the island and made a small collection of mammals and birds, obtaining or recording altogether twelve species of the latter. Subsequently, in his 'List of the Birds and Mammals of the Steere Expedition' (published at Ann Arbor in 1890), Dr. Steere added eight more species, thus bringing the total number of birds recorded from Balâbac up to twenty species. Scanty as this record was, the presence of such species as *Cittocincla nigra*, *Criniger frater*, *Parus amabilis*, *Æthopyga shelleyi*, and *Dryococcyx harringtoni* caused it to be a foregone conclusion that the avifauna would prove to be identical, or nearly so, with that of Palâwan; and the acquisition of further material by the present writer, raising the number of known species to a total of sixty-eight, has failed to produce a single form that has not already been found or does not almost certainly exist in Palâwan. The only salient difference between the two islands so far appears to be in the absence of *Polyplectron nehrkornæ* from Balâbac, and perhaps there are other deficiencies, which may serve to indicate a certain degree of individuality in its ornis.

* This account of Balâbac is partly compiled from the China Sea Directory. A map of the Balâbac-Palâwan Group will be found in Proc. Zool. Soc. 1889, p. 220.

In the following list those species which were first recorded by Dr. Steere are distinguished by an asterisk.

1. Phylloscopus borealis (Blas.).

*2. Monticola solitarius (P. L. S. Müll.).

*3. Cittocincla nigra, Sharpe.

An immature female shot in Balâbac has the sides and flanks strongly washed with ferruginous, the black plumage of the lower breast being very faintly washed with the same hue. The thigh-plumes are warm sepia-brown. A Palâwan male, nearly adult and having the rectrices much worn, has the secondaries broadly margined on the external webs with ferruginous red, so that the wing, when closed, exhibits a conspicuous rusty-red band. Some of the upper wing-coverts and the shoulder-plumes are similarly margined or spotted; and on each side of the head, just above and below the distal extremity of the ear-coverts, there are small defined patches of the same reddish colour.

4. Orthotomus ruficeps (Less.).

5. Motacilla flava, L.

6. Motacilla melanope, Pall.

7. Motacilla ocularis, Swinhoe.

8. Limonidromus indicus (Gm.).

A single specimen, shot in the forest on the hills overlooking the Spanish settlement.

9. Anthus richardi, Vieill.

One specimen only obtained; a male, shot Dec. 26, 1893.

10. Mixornis woodi, Sharpe.

11. Turdinus rufifrons (Tweedd.).

12. Ptilocichla falcata, Sharpe.

I include this species with some doubt on the authority of my native hunter, who, however, was familiar with the bird, he having obtained it previously in Palâwan.

13. Anuropsis cinereiceps (Tweedd.).

*14. Criniger frater, Sharpe.

15. Chloropsis palawanensis, Sharpe.

The moustache is wholly violet-blue in the hen-bird, and in the male the terminal portion is white, more or less washed with violet-blue of a less vivid hue than in the female.

*16. Oriolus palawanensis (Tweedd.).

*17. Parus amabilis, Sharpe.

*18. Dendrophila frontalis (Swains.).

Sitta frontalis (Swains.); Gadow, Cat. Birds B. M. iii. p. 358.

A specimen shot in Balâbac had the leg coloured dull brownish red instead of brown as in Palâwan specimens. The British Museum Catalogue, quoting Jerdon, gives the soft parts as follows:—"Bill bright cobalt-blue; legs sienna-yellow; orbital skin lemon-yellow; iris light straw-colour." Oates notes the bill as "coral-red" in Burmese specimens, and it is the same here in the Balâbac-Palâwan birds. In the Balâbac bird the bill is tipped with brown, and the orbital skin is yellowish grey.

19. Lanius lucionensis, L.

20. Chibia palawanensis (Tweedd.).

21. Buchanga palawanensis, Whitehead.

Buchanga cineracea (Horsf.); Sharpe, Tr. Linn. Soc., ser. 2, Zool. i. p. 324.

Buchanga leucophæa (Vieill.); Tweeddale, P. Z. S. 1878, p. 615.

Buchanga palawanensis, Whitehead, Ibis, 1890, p. 47.

Mr. Whitehead has noted the iris of this species as dark grey. Both in Palâwan and Balâbac adult male specimens the iris is pure crimson-lake. Young birds have the iris dark grey, and it passes through brown, orange-brown, and brick-red until it attains the full depth of colour seen in the adult birds.

22. Artamides sumatrensis (S. Müll.).

23. Cyanoptila cyanomelæna (Temm.).

24. Hypothymis occipitalis (Vig.).

25. Siphia lemprieri, Sharpe.

Cyornis banyumas (Horsf.); Tweeddale, P. Z. S. 1878, p. 615 (*partim*); Wardlaw-Ramsay, Ornith. Works Lord Tweedd., Appendix, p. 656 (*partim*).

Siphia elegans (Temm.); Sharpe, Cat. Birds B. M. iv. p. 447 (♀).

Siphia lemprieri, Sharpe, Ibis, 1884, p. 319; id. ibid. 1888, p. 199 (*partim*); Everett, Journ. Straits Br. R. As. Soc. (1889) xx. p. 133; Whitehead, Ibis, 1890, p. 48 (*partim*).

Cyornis herioti, Wardlaw-Ramsay, Ibis, 1886, p. 159 (*partim*).

Siphia ramsayi, W. Blasius, Ibis, 1888, p. 373; id. Ornis, 1888, p. 303.

The type of *Siphia lemprieri*, Sharpe, was a male bird in adult plumage collected by Mr. Lempriere's hunter at Marási Bay, in Palâwan. The female had already been procured by myself as early as 1878 at Puerto Princesa, but it was overlooked owing to Lord Tweeddale having catalogued the specimen as *Cyornis banyumas*, ♀. Subsequently Dr. Sharpe catalogued my bird as *Siphia elegans*, ♀, and in 1886 Major Wardlaw-Ramsay identified it with his new *Cyornis herioti* from Luzon, while in 1888 Dr. Blasius re-described *S. lemprieri* and gave it the title of *S. ramsayi*. Finally, in 1889 I pointed out, in my 'List of the Birds of the Bornean Group,' that the bird obtained by me at Puerto Princesa was undoubtedly the hen of *S. lemprieri*, a conclusion which is now confirmed by a series of both sexes recently collected in Balâbac and S.W. Palâwan.

As the female of this species does not appear to have been described, I append the following note of an adult specimen shot in Balâbac on Dec. 26, 1893:—Forehead, crown, and occiput dark plumbeous grey, washed with olive, each feather with narrow obsolete transverse bars, which are most pronounced on the forehead; sides of neck, mantle, scapulars, and back warm olivaceous brown, deepening posteriorly into bright ferruginous brown on the upper tail-coverts; rectrices dark sepia brown, the exterior webs fer-

ruginous brown, except on the two central quills, which are wholly ferruginous brown, and all showing in certain lights close obsolete transverse bars; under surface of the quills hair-brown; primaries dark brown, and all except the first and second margined basally on the outer webs by a thin line of ferruginous brown; the secondaries and tertials also dark brown, but increasingly margined bright ferruginous brown until the entire outer webs are of the latter colour; under-wing-coverts, axillaries, and edges of wings white, tinged with buff; major wing-coverts dark brown, with bright ferruginous-brown outer webs; the other coverts broadly tipped with bright ferruginous brown; a conspicuous line from the nares over the eye and reaching nearly to the posterior angle of the orbit, and a line fringing the lower margin of the orbit, pure white (tinged with buff in some examples); lores black; ear-coverts dark grey, washed with olive; cheeks the same, but rather darker grey; sides and flanks olive-grey, washed with buff; chin white; throat pale buff, passing into deep orange-buff on the breast, on the sides of which some of the plumes show obsolete dusky margins; abdomen and lower tail-coverts white; thigh-plumes dark grey, edged with white. Length 5·80 inches, culmen 0·68, wing 2·90, tail 2·35, tarsus 0·68.

In another female from Balâbac the dimensions are rather less, but in my original Puerto-Princesa specimen they agree very closely. This species is marked by its large bill. The culmen in the type-skin of the male, measured from its insertion in the skull, is 0·70 inch, and it is the same in a female collected by Mr. Whitehead at Taguso in Palâwan.

Dr. Sharpe was evidently in error in regarding *S. lemprieri* as a Palâwan representative of *S. philippinensis*, for both sexes of the latter are blue. Moreover, *S. philippinensis* is a representative form of *S. banyumas*, which itself occurs in Palâwan, a male bird having been obtained by me at Puerto Princesa in 1878, and a second male having been procured by Mr. Whitehead on July 21, 1887, at Taguso. *S. lemprieri* rather appears to be a representative of *S. magnirostris*

(Blyth), which ranges from Sikkim to Tenasserim, and which, while the plumages of both sexes show a fairly close general resemblance, has a culmen (measured as above) of 0·80 inch in the male, and 0·72 to 0·74 in females from the latter locality.

The series of *S. lemprieri* obtained by Mr. Whitehead and myself demonstrates that the very young birds have a spotted plumage, that the male then passes into the plumage of the adult female, and that from the latter it moults directly into the blue plumage of the adult, the blue feathers appearing first on the forehead and upon the upper wing-coverts. I have no record of the coloration of the soft parts in Balâbac specimens, but on the label of the female collected at Puerto Princesa they are noted: "Iris chocolate; bill black; legs lead-grey."

*26. Æthopyga shelleyi, Sharpe.

27. Cinnyris aurora (Tweedd.).

28. Anthreptes malaccensis (Scop.).

29. Myzanthe pygmæa (Kittlitz).

30. Prionochilus johannæ, Sharpe.

31. Munia jagori, Cab.

Only immature specimens were obtained, so that this identification is open to question.

32. Urolonchа everetti (Tweedd.).

33. Calornis panayensis (Scop.).

34. Eulabes palawanensis, Sharpe.

35. Corvus pusillus, Tweedd.

Birds of this species are solitary in their habits, and I only once observed as many as three together. They frequent the trees by the sea-shore, and even the mangroves, as well as the jungle inland, but they never enter the native villages, in this particular and in their non-gregarious habits presenting a notable contrast to the Philippine Crow. The note is rather feeble for the size of the bird. It may be syllabled "Uàk," uttered quietly in a guttural tone, generally only

once, when it may readily be mistaken for the croak of a large frog; but sometimes it is repeated four or five times rapidly in succession, when it equally reminds one of the quacking of ducks. Judging from its note and habits, *C. pusillus* is a Raven rather than a Crow. According to Steere this bird is not confined to the Balâbac-Palâwan group of islands, but occurs also in Mindoro.

*36. Pitta propinqua, Sharpe.

Brachyurus propinquus, Sharpe, Tr. Linn. Soc., ser. 2, Zool. i. p. 330.

Pitta propinqua, Sharpe; Sclater, Cat. Birds B. M. xiv. p. 443 (*partim*); Whitehead, Ibis, 1893, p. 505.

Pitta erythrogastra, Everett, Journ. Str. Br. R. As. Soc. xx. p. 148 (*partim*).

Dr. Sharpe founded his *Brachyurus propinquus* on an adult male bird obtained by Dr. Steere in Balâbac. Dr. Steere obtained a second specimen of a red-bellied Pitta, also a male, but in very immature plumage, at Dumalon, near Zamboanga, in Mindanao, and this bird Dr. Sharpe assigned also to *B. propinquus*, though not without hesitation. Owing to the meagre material available, the validity of this species has always been open to question; and hence I made a point of securing a series of these red-bellied Pittas from Balâbac and Palâwan, with the result that it has at length become possible to compare adult birds from Balâbac with adult birds from Luzon, Mindanao, and Palâwan.

The characters relied upon by Dr. Sharpe as distinguishing *P. propinqua* from typical *P. erythrogastra* were:—(1) *Back* entirely cobalt, including the *scapulars*; only the middle of the back green, washed with blue, forming a band across the back. (2) *Throat* entirely brownish black, becoming jet-black on the fore neck. (3) *Chest* bright blue, the sides only greenish. (4) *Under wing-coverts* dull blue, instead of greyish brown.

Of these characters the last three appear to be of no value, as birds from Luzon and Mindanao present them in greater or less degree, and I have come to the conclusion that they

belong to the fully-adult birds, from whatever locality. But on viewing the upper surfaces of a series of Balâbac-Palâwan specimens side by side with a series of Luzon-Mindanao birds, the first-mentioned character is at once seen to be a good one, the green tract on the backs of the former series forming a comparatively narrow band, whereas in the latter series it extends nearly to the rump. It is noticeable, further, that the cobalt and green hues are much brighter than in any of the specimens from Luzon or Mindanao, though it is no doubt very possible that this may be owing to the freshness of the Balâbac-Palâwan skins.

I have, therefore, no longer any doubt that *P. propinqua* differs sufficiently from *P. erythrogastra* to make it necessary that it should be separated from the latter by the appropriate appellation which Dr. Sharpe originally bestowed upon it. And in this case it will follow that the locality "Mindanao" given in the 'Catalogue of Birds' will require correction, as, indeed, it would in any case, for the type was described from Balâbac.

37. Pitta atricapilla, Less.

Brachyurus sordidus (Müll.) ; Sharpe, Tr. Linn. Soc., ser. 2, Zool. i. p. 331.

Dr. Sharpe (*t. c.*) says that the Bornean *Pitta muelleri* is distinguished from *P. atricapilla* by the almost entire absence of the black abdominal patch, and by having the thighs blackish instead of ochraceous brown. The large extent of the black patch in the latter species is without doubt a stable character, for although one occasionally meets with individuals of *P. muelleri* which have the black on the belly of very markedly larger extent than is found in the ordinary run of these birds, it never attains to the development constantly presented by adult birds of *P. atricapilla*. The coloration of the thigh-plumes, on the other hand, seems subject to a good deal of variation in the Bornean species. In a series of fourteen skins from Balâbac and Palâwan before me, the thighs are uniformly russet-grey with a faint wash of pale green in some instances, and a few have obsolete

blackish spots on the centres of a number of the feathers. Comparing this series with skins of *P. muelleri* from N.W. Borneo, I find that two of the latter, both males and shot at Lumbidan in May 1892 and July 1893 respectively, have the thighs sooty black, but a female, also shot at Lumbidan in July 1893, has the thighs uniform ochraceous brown, and several specimens from the western part of Sarawak exhibit as light a plumage as this hen-bird from Lumbidan. In very young birds the colour of the thighs is uniform dark grey. Mr. Whitehead ('Ibis,' 1893, p. 499) has noted that, in addition to the character of the abdominal patch, *P. atricapilla* is distinguished by the metallic colour of the shoulder-patch and rump-band being deeper and of a silvery blue.

38. Chrysocolaptes erythrocephalus, Sharpe.

39. Hemilophus pulverulentus (Temm.).

40. Tiga everetti, Tweedd.

41. Alcedo bengalensis, Gm.

42. Alcedo meninting, Horsf.

43. Pelargopsis gouldi, Sharpe.

Pelargopsis leucocephala, Sharpe, Ibis, 1888, p. 197.

44. Ceyx euerythra, Sharpe.

*45. Halcyon pileata (Bodd.).

46. Anthracoceros lemprieri, Sharpe.

Anthracoceros lemprieri, Sharpe, Nature, May 14, 1885, xxxii. p. 46.

A. marchei, Oustalet, Naturaliste, July 15, 1885, p. 108.

The iris in the adult male is pure crimson-lake, in the female indian-red, and in the young bird a paler tint of indian-red; bill ivory-white; bare skin on the head bluish white; feet dark olivaceous grey; claws dark grey. The three birds from which these notes were taken were shot together on Dec. 27, 1893.

47. Cacomantis merulinus (Scop.).

48. Surniculus lugubris (Horsf.).

*49. Dryococcyx harringtoni, Sharpe.

50. Centrococcyx eurycercus, Hey.

*51. Cacatua hæmaturopygia (P. L. S. Müll.).

*52. Prioniturus cyaneiceps, Sharpe.

Prioniturus discurus, Sharpe, Tr. Linn. Soc. ser. 2, Zool. i. p. 312.

P. cyaneiceps, Sharpe, Ibis, 1888, p. 194.

P. plateni, W. Blasius, Ibis, 1888, p. 372; id. Ornis, 1888, p. 305.

The coloration of the soft parts is as follows:—Bill whitish; feet plumbeous grey; iris deep chocolate-brown.

53. Astur trivirgatus (Temm.).

54. Spilornis davisoni, Hume.

Spilornis davisoni, Hume, Str. F. i. pp. 305, 422 (1873).

Spilornis melanotis, Jerdon; Sharpe, Cat. Birds B. M. i. p. 289 (*partim*).

? *Spilornis bacha,* Whitehead, Ibis, 1890, p. 42.

? *Spilornis pallidus,* Steere, List Birds Steere Exped. 1890, p. 7.

Mr. Whitehead, in his list of Palâwan birds, enumerates *Spilornis bacha* as having been shot by him on that island; but he did not preserve the specimen as it was damaged, and he believed that he recognized it correctly. Dr. Steere (*t. c.*) also records the occurrence of a *Spilornis* in the same island and catalogues it as *S. pallidus.* I have been so fortunate as to obtain three examples, one from Balâbac and two from Palâwan, which there can be little doubt, I think, belong to the same species as the birds recorded by Messrs. Whitehead and Steere. On comparison with the other species of Serpent-Eagles in the Natural History Museum, they come so exceedingly close to *S. davisoni,* Hume, which was originally described from the Andaman Islands, that I think the safest course, in view of the existing uncertainty as to the number of species in this group of birds, is to record the Balâbac-Palâwan species under Hume's title. My specimens are rather more rufous, and the zigzag "watering" on the

breast somewhat more pronounced, than appears to be usual in Andaman and Malacca skins, but this may be only because the latter have faded. The three specimens resemble each other closely, and they do not recall any phase of plumage either of *S. bacha* or *S. pallidus*, so far as my own experience goes. I may mention that I did not see any of my specimens in the flesh, and I am therefore unable to record any particulars as to the coloration of the soft parts. The Balâbac specimen was shot in the S.W. monsoon; those from Palâwan in the N.E. monsoon.

55. Butastur indicus (Gm.).

56. Pandion leucocephalus, Gould.

One specimen shot, but not preserved. It appeared to belong to this species and not to *P. haliaëtus*.

*57. Demiegretta sacra (Gm.).
Ardea jugularis, Steere, List, 1890, p. 26.

*58. Bubulcus coromandus (Bodd.).

59. Gorsachius melanolophus (Raffl.).

60. Turtur tigrina (Temm.).

61. Macropygia tenuirostris, G. R. Gray.

*62. Carpophaga ænea (L.).

*63. Carpophaga bicolor (Scop.).

*64. Megapodius cumingi, Dillwyn.

*65. Gallus bankiva, Temm.

66. Rallina fasciata (Raffl.).

*67. Charadrius fulvus, Gm.

68. Tringoides hypoleucus (Linn.).

II. Notes on the Birds of Palâwan.

The last complete list of the birds of Palâwan was that of Mr. J. Whitehead published in 'The Ibis' in January 1890, when a total of 157 species was recorded. Having visited Rocky Bay, in S.W. Palâwan, during the latter half of

January and the beginning of February in the present year, I am enabled to place on record ten more species, and at the same time to add a few supplementary notes to Mr. Whitehead's paper.

Phylloscopus xanthodryas, Swinhoe.

One male specimen, shot in January. New to the Palâwan sub-group, though recorded several times as a winter migrant to Northern Borneo.

Cittocincla nigra, Sharpe.

I found these birds fairly common in the belt of dense jungle lining the sea-shore. Like *C. stricklandi* and *C. suavis*, they are extremely shy, and never frequent the close vicinity of human habitations, wherein they differ conspicuously from their close allies the *Copsychi*. The latter birds show even a preference for cultivated grounds and for houses, perching on the verandah-rails and singing to their hearts' content in the presence of the occupants, and hopping into the rooms to pick up food beneath the tables, when they think they are unobserved. The song of *Cittocincla nigra*, at any rate when pairing, bears a close general similarity to that of *Copsychus musicus* and *C. amœnus*, but its range of notes is perhaps scarcely so considerable and the voice is weaker.

Orthotomus ruficeps (Less.).

Mr. Whitehead notes that this Tailor-bird was scarce in Palâwan, but I have found it abundant in the shore-jungle. The belt of forest lining the shore in Palâwan is characterized by the invariable presence of this and the preceding species, together with a number of others, viz., *Mixornis woodi*, *Ægithina viridis*, *Buchanga palawanensis*, *Rhipidura nigritorquis*, *Æthopyga shelleyi*, *Chalcostetha insignis*, *Cinnyris aurora*, *Anthreptes malaccensis*, *Calornis panayensis*, and *Megapodius cumingi*. Of course, a great many other species are met with, but those mentioned above may be always found in such situations.

Motacilla flava, L.

Birds shot in the middle of January had already begun to

moult into the spring plumage, as pointed out to me by Dr. Sharpe. These Wagtails, with *M. melanope*, frequently associate with the flocks of migratory waders on grassy spaces and muddy flats bordering the beach, running about among a mixed crowd of *Ægialitis geoffroyi*, *Æ. dubia*, *Strepsilas interpres*, &c., and hunting for food among them with perfect unconcern. I have also observed them frequent coral-reefs when laid bare at ebb-tide.

Motacilla melanope, Pallas.

Far less abundant than *M. flava* and not occurring in flocks, as the latter so often does. This migrant is not recorded in Mr. Whitehead's list.

Motacilla ocularis, Swinhoe.

Not uncommon, but decidedly scarcer than the preceding species. New to Palâwan.

Anthus rufulus, Vieill.

A single specimen obtained. New to Palâwan.

Anthus cervinus, Naum.

New to Palâwan.

Hyloterpe whiteheadi, Sharpe.

This species appears to affect the hill-country rather than the lowlands. Dr. Sharpe (Ibis, 1893, p. 551) has recorded it in his "Bornean Notes" as among the birds collected by me on Mt. Penrisen in Sarawak. This *lapsus calami* is patent, the Penrisen bird being, of course, *H. hypoxantha*, between which and *H. whiteheadi* there is only generic resemblance.

Artamides sumatrensis (S. Müll.).

These birds appeared to me to be much more common in Palâwan than in N.W. Borneo, and I think that their habits are somewhat different. In Borneo they affect the lofty virgin forests and seem to keep pretty much to the crowns of the higher trees; but in Palâwan they haunt chiefly the lower trees, and I have seen them not only among the scrub skirting the beach and among the mangroves, but even on the sands at the edge of the jungle. They fly strongly, but

rather heavily, for short distances, and then stiffen their wings and float for fifty yards or thereabout, and recommence their flight and again float on extended pinions; but they soon begin to sink earthward, and I doubt whether they can continue the hawk-like floating for any considerable distance. They have a shrill whistling cry, and they are not gregarious.

Hemichelidon ferruginea, Hodgson.

Three specimens shot in the hill-country. This species is new to Palâwan, but *H. sibirica* has also been obtained by Dr. Platen, both being doubtless winter migrants from Southern China. It is impossible to separate *H. cinereiceps* of Kina Balu from *H. ferruginea*. Dr. Sharpe, after an examination of my specimens, agrees with this conclusion.

Culicicapa panayensis, Sharpe.

Found by my hunters only among the hills up to about 3000 feet, where it seemed to be rather abundant, as a small series was obtained within a few days. The Palâwan birds do not appear to differ from typical specimens.

Chalcostetha insignis (Jard.).

A common species, especially in the mangrove-swamps, a situation which has great attraction for all the species of Sun-birds in Palâwan. These birds were pairing early in February, and when walking through such a swamp one morning I was a witness of the whole process of their courtship. The cock bird would perch on a twig within a foot or two of his mate, draw himself up stiffly erect, slowly tilt his head back until his beak pointed to the sky, and so remain for a space motionless as a statue. He evidently made a point of always fronting the morning sun, and the curious attitude of the head, causing the refulgent gorget to swell outward, is no doubt assumed for the purpose of causing its beams to play upon the metallic plumage of the throat. The hen meanwhile would pretend to be busy hunting for food, but it was clear that she was fully conscious of her mate's display, for an incessant rapid quivering agitated her whole body and she kept up a continuous low twittering sound. Presently the cock would fly close to her and flutter

around her with half-spread wings, and as the wings were raised the fluffy pectoral tufts were instantly displayed, every hair-like plume apparently starting erect and radiating, so that they resembled ball-like blossoms of rich orange-yellow. These actions were repeated many times until the birds flew out of sight; and they *seemed* to indicate that the male bird was conscious that the play of the sunlight on his gorget brought out its brilliancy, and that the birds had the same sense of colour in kind, if not in degree, as a human being possesses.

Anthreptes rhodolæma, Shelley.

Three specimens. New to Palâwan.

Arachnothera dilutior, Sharpe.

Two specimens, noted as females by my hunter, exhibit small pectoral tufts of a yellower hue than is the case in male birds. I find that three specimens shot and noted from dissection as females by myself at Puerto Princesa also have pectoral tufts, but smaller and paler in hue than in male birds. It seems curious that an error should have occurred in all five instances and young males have been determined as females; but I do not feel confident that this may not have been so. The eye-wattle in this bird is quite inconspicuous in dried skins, but in the living bird, when alarmed or excited, it becomes distended and forms a prominent circlet of brilliant lemon-yellow.

Calornis panayensis (Scop.).

These glossy Starlings were quite the commonest species in the shore-jungle and even in the mangrove-swamps at Rocky Bay in January and February. By far the greater number were in immature streaked plumage, with the shining dark green of the mature plumage only beginning to show, so that it is clear that they take fully a year in assuming the adult livery, if not longer. At the time of my visit there occurred at frequent intervals along the shore perfectly leafless trees (*Erythrina*?) bearing abundance of large pyramidal bracts of pure scarlet-lake flowers and branches of long black seed-pods. These trees, which were visible from a great

distance, formed a constant attraction to a variety of birds, and particularly so to the Starlings, every one being tenanted by a flock of them in the early morning. The attraction seems to consist in a drop of sweet liquid which lies at the bottom of each flower, and which I often saw the Starlings engaged in sipping. The Cockatoos and Parrots appeared to bite off the flowers, as their short beaks prevented their getting at the nectar otherwise. Besides these birds, *Chloropsis palawanensis*, *Ægithina viridis*, *Buchanga palawanensis*, *Artamides sumatrensis*, *Corvus pusillus*, and all the Sun-birds and Flower-peckers may be seen at one and the same time on a single tree, while at intervals a troop of monkeys will invade it, tearing off entire bunches of flowers, biting a few and then flinging them down on the beach below. Where the trees overhang the shore, the sand is thickly strewn with the petals and bunches of the flowers, and seen from a distance it appears as if glazed with a stream of arterial blood flowing down the beach to the brink of the sea. It would be difficult to imagine a more gorgeous bit of tropical colour than is presented by one of these trees thickly studded with large, brilliant scarlet-lake pyramids of bloom, and, perched or flying among the naked branches, snowy-white Cockatoos, rich golden and black Orioles, shining malachite-green *Tanygnathi* and *Prionituri*, with a crowd of smaller birds,—all lit up by the fresh morning sunlight on a background of pale blue sky. Dry skins afford no adequate idea of the gloss of plumage and its purity of hue when the living birds are seen under the above conditions.

Pitta propinqua, Sharpe.

Pitta erythrogastra, Sharpe, Ibis, 1888, p. 200; Everett, P. Z. S. 1889, p. 225; Whitehead, Ibis, 1890, p. 50, and 1893, p. 504.

It may be safely assumed that the descriptions of the young plumage and of the soft parts of *P. erythrogastra* in Mr. Whitehead's review of the *Pittidæ* in 'The Ibis' for 1893 were taken from Palâwan birds, and that they do not, therefore, appertain to true *P. erythrogastra*, although it is probable that the same description would apply to both species.

Batrachostomus javensis (Horsf.).

Batrachostomus cornutus, Sharpe, Ibis, 1888, p. 198; Everett, P. Z. S. 1889, p. 226; id. Journ. Str. Br. R. As. Soc. 1889, p. 165; Whitehead, Ibis, 1890, p. 46.

The only specimen of this species known from Palâwan was collected by Mr. Whitehead, and it is now in the Tring Museum. Mr. Hartert identifies it with *B. javensis.*

Batrachostomus affinis, Blyth.

A single specimen obtained at Rocky Bay on Feb. 7th was in pure rufous plumage. It was a female, and one of the embryos in the ovarium was in an advanced stage of development, showing that these birds were breeding at the above date. The wing measured 4·85 in., the other measurements agreeing with those given in the British Museum Catalogue by Mr. Hartert, who, with Dr. Sharpe, considers the bird to be undoubtedly *B. affinis.* The individual in question was shot in the jungle close to the shore, and the soft parts were as follows :—Iris golden yellow; bill sienna-brown, the mandible pale yellow, tinged more or less with sienna-brown; gape pale yellowish, almost white; feet dirty light brown; nails sepia-brown. This specimen is also in the Tring Museum.

Circus spilonotus, Kaup.

Mr. Whitehead (Ibis, 1890, p. 43) mentions having seen a Harrier in Palâwan, which he identified with *C. spilonotus.* The accuracy of his observation is now proved by the acquisition of a young bird of the present species by my hunters at Rocky Bay in January.

Spilornis davisoni, Hume.

See remarks above on the Balâbac *Spilornis.*

Accipiter virgatus (Reinw.).

Not hitherto recorded from Palâwan, where it occurs probably only as a winter migrant.

Butorides amurensis, Schrenck.

Ardetta macrorhyncha, Gould, P. Z. S. 1848, p. 39.

Butorides javanica, Everett, Journ. Str. Br. R. As. Soc. 1889, p. 189 (*partim*).

This large race migrates to Palâwan and Northern Borneo, and in both localities occurs with true *B. javanica.*

Strepsilas interpres (L.).

Turnstones were seen every day on the pebbly beach at Rocky Bay associating with the other migratory shore-birds and running about actively and tilting the small stones over with their beaks. On one occasion as many as eleven were counted together.

III.—*Notes on the Auckland-Island Shag* (Phalacrocorax colensoi). By Sir Walter L. Buller, K.C.M.G., D.Sc., F.R.S.

Mr. H. O. Forbes, in his paper "On the Birds inhabiting the Chatham Islands," which appeared in 'The Ibis' for October 1893, describes, under the name of *Phalacrocorax rothschildi,* a Shag found at the Chatham Islands and in the south of New Zealand, separating it from *Phalacrocorax colensoi* and saying: "this species is at once distinguished by the approximation of the dark plumage of the head beneath the throat, leaving a comparatively narrow white stripe between them." He also makes the possession of both the white alar bar and the white dorsal spot characteristic of his new species.

In my opinion we have a good deal more to learn about the Shags inhabiting New Zealand and the adjacent islands; and I think Mr. Forbes was somewhat rash in characterizing a new species without further investigation.

The type of my *Phalacrocorax colensoi* was from the Auckland Islands; but (like all the other specimens collected there by Mr. Burton at a wrong season of the year) it was in old and faded plumage, with dingy colours. Quite recently, however, I have had an opportunity of examining a large number of skins, in good plumage, collected by Mr. Henry Travers at the Auckland Islands and on Campbell Island during the last cruise of the Government gunboat 'Hinemoa.' The examination of this collection has satisfied